Initial	Date
CW	3/6/06
MHE	3/7/06
CHC	3/3/06

BA WTR
WR ND
Mail Stop 60189

MAR 0 7 2006

Memorandum

To: Project Leader, Tewaukon National Wildlife Refuge

From: Chief, Division of Water Resources

Subject: 2005-2006 Annual Water Use Report/Management Plan

The subject reports for Tewaukon and Storm Lake National Wildlife Refuges have been reviewed and approved as submitted. The 2006 Water Management Plan for Tewaukon NWR will be forwarded to the North Dakota State Engineer as the 2006 Operation Plan.

The Service applied for a prescriptive water right for Tewaukon NWR in December 2001 and it is numbered 5548P for future reference in your report.

The figures for the Declaration of Filing for Storm Lake NWR are incorrect in your report and should be corrected on future reports. Storage should be 729 acre-feet and seasonal use is 516 acre-feet.

Attached is the signed approval page for your files.

/S/ CHERYL C. WILLIES

Attachment

bcc: WTR rf

WTR:CCordova:cc:03/03/2006
I:\WATERUSE\ND\TEWAUKON NWR\wateruse_05.doc

Signature Page

2005 Water Use Report
2006 Water Management Plan

Submitted By: _____ Date: 2/3 /06
Jeffrey King, Project Leader

Reviewed By: _____ Date: 2/13/06

Approved By: _____ Date: 2/13/06

Concurrence: _____ 2/13/06

Tewaukon National Wildlife Refuge Complex
2005 Water Use Report
2006 Water Management Plan

REFUGE MANAGED WETLANDS

CCP Refuge 1.5 Objective: Annually provide for approximately 20% in dry, 20% in shallow, 20% mid-depth, and 20% open water wetland conditions on Refuge managed wetlands and manage remaining 20% as a reserve to adjust to local climatic and habitat conditions.

1. **List of Water Rights**
   See Appendix 1.

2. **Water Use - 2005**
   The year 2005 started out with little to no snowfall and no rain until the end of May. We received over eight inches of rain during the first few days of June and the rain continued into November. The average annual precipitation for southeastern North Dakota is 20 inches of rain and about 40 inches of snow. 2005 began dry but made-up for it starting in June. Flooding occurred in June as the upper portion of the Wild Rice River Watershed also received over 10 inches of rain in a short time period. Water overtopped three of the four major dams on the Refuge and flooding occurred throughout the Watershed.

Month	Temperatures		Precipitation	
	Low (Average)	High (Average)	Rain	Snow
January	5°F	14 °F	0"	9"
February	9 °F	14 °F	0"	2"
March	23 °F	51 °F	0"	1"
April	33 °F	61 °F	0.75"	N/A
May	42 °F	65 °F	3.30"	N/A
June	55 °F	72 °F	10.50"	N/A
July	67 °F	83 °F	3.66"	N/A
August	68 °F	80 °F	5.52"	N/A
September	46 °F	73°F	3.29"	N/A
October	32 °F	65 °F	2.46"	N/A
November	35 °F	45 °F	1.95"	6"
December	23 °F	35 °F	0"	14"
Totals:	36.5 °F	54.8°F	31.43"	32"

Data loggers were installed in Pools 1, 2, 4, 7, 8, 11, 14, 16A in the summer of 2005. A field visit from the Water Resources Division in the RO was made in 2004 to facilitate the operation of the loggers. More work will be needed in 2006 to make the data loggers operational.

Pool 1 (Lake Tewaukon): Pool filled to operating level of 1148.22 on February 22nd. Heavy rains and run-offs pushed lake to high of 1151.96 on July 2nd. The water levels on the Lake stayed high all year. Freeze up at 1148.54

Parker Bay (east end of Lake Tewaukon): Only local inflows came through LaBelle Creek. Boards were pulled on September 27th to lower water levels. Freeze up elevation was 1148.50

Pool 2 (Cutler Marsh): Pool 2 dam was overtopped on July 1st until July 4th . High water flows continued all year. The pool froze at 1148.35

Pool 2A: Pool 2A followed Pool 2 levels.

Pool 3 (Maka Pool): Elevation at 1158 on July 1st . Boards pulled to keep pool drawn down to facilitate emergent growth. Water below gauge most of the year. Freeze up occurred at 1150.75

Pool 3A: Pool followed Pool 3 elevations.

Nickeson Bottoms: Water overtopped dike on June 30th until approximately July 2nd. Boards were pulled to save dike from breaching. Boards put back in on approximately July 5th when water had dropped in the Wild Rice River. Tried to remove water from the 21st of July through fall. Freeze up level was approximately 1154.

Pool 4 (River Pool): Pool 4 filled to operating level on March 27th of 1158.85. This elevation kept water off of neighboring farmer's field. The dike was overtopped from June 30th through July 4th. The water level was difficult to maintain due to high inflows. Boards pulled on November 12th for winter draw down. This elevation kept water off of neighboring farmers field. Freeze up at 1153.

Pool 5: Pool filled to 1162 on April 1st. Freeze up occurred at 1162.

Pool 5A: Pool was filled to approximately 1164 on April 1st. Freeze up elevation 1164.

Pool 6: Structure and dike breached. Pool dry at freeze up at 1163. ✓

Pool 7: Tried to maintain water level at 1172 all year. Freeze-up was at 1172.

Pool 7A: Attempted to keep 7A at 1172 to dry. High precipitation filled 7A which then ran into Pools 7 and 6 and over township road east of Pool 6. Boards placed in 7A on June 15th to slow water flows to township road. Water came off the road on June 17th and boards were removed to try to dry down 7A to 1172. Pool froze up nearly dry at 1173.

Pool 8 (Hepi Lake): Inflow from ditch to south filled pool to 1174.80 on March 7th. Boards pulled on March 31st to try to dry Pool 8 after downstream pools 7, 5, and 5A were filled to management levels. High flows from Freiner Dam to the south kept Pool from target level of 1170. Freeze up 1175

Pool 9: Inflows from Pool 8 filled the pool to approximately 1174. At that elevation water outflows into Pool 4. Freeze up at approximately 1167.

Pool 10: Pool began year at 1173 there was no flow into this pool except local precipitation. Freeze up occurred at approximately 1175.

Pool 11 (West White Lake): This pool peaked at approximately 1153 on June 14th from high amounts of precipitation and local run-off. Water drained through 11 into Pool 12 into Pool 2 and into the Wild Rice River. Water went over County Road 12 on June 14th and came off the road on June 16th. Freeze up occurred at 1148.45

Pool 12 (East White Lake): Pool 12 received inflows from Pool 11 to help get water off of County Road 5. By freeze up, Pool 12 was at approximately 1148.45

Pool 13 (Mann Lake): Local runoff from the high amount of precipitation came into Pool 13. Evaporation had lowered it to approximately 1204.2 at freeze up.

Pool 14 (Sprague Lake): The lake peaked at 1218.18 on June 3rd. Over road north of Sprague Lake on June 30th through July 5th. Tried to maintain full pool at 1214.50 but it was difficult with the high water flows. Freeze up at approximately 1214.20.

Pool 16 (Horseshoe Slough Group):
Two structures in A dike overtopped July 2nd through July 6th. Water from the Wild Rice River ran into Horseshoe Unit. On July 6th County Highway Department diverted water into B-West off County Road #3. When water receded back flowed water into the Wild Rice River through A Pool all fall. Township diverted water off township road W of the old Susag place into C North for approximately one month.

Pool A – Freeze up occurred at 1206.64
Pool B – Freeze up at 1206.64
Pool C – Freeze up at 1206.64
B West – Freeze up at 1205.64
B North – Freeze up at 1206.64.
C North – Freeze up at 1207.35
C South and C East – Freeze up at 1207

3. Impoundment Data

Please see the attached chart (Appendix 2) for capacities for each pool at various elevations. No formal inflow/outflow records were maintained.

4. 2006 Plans

CCP Refuge 1.2 Objective

Pool 1 (Lake Tewaukon): Fill this pool to 1148 and maintain that elevation for the fisheries and resting area for migratory birds in the spring and fall. May need to lower the Lake 1 foot in the spring to help reduce bank erosion.

Parker Bay (east end of Lake Tewaukon): Maintain 2-3 feet of depth. No inflows to encourage emergent and submergent vegetation.

Pool 2 (Cutler Marsh): This pool will be maintained at 1150. May need to temporarily lower pool slightly to facilitate Dike 2A construction.

Pool 2A: This pool will follow the elevation maintained in Pool 2.

Pool 3 (Maka Pool): Maintain this pool at 1150 to encourage emergent vegetation and to facilitate water lowering in Nickeson Dike.

Pool 3A: Maintain this pool in concert with Pool 3.

Nickeson Bottoms: Continue to drop water through evaporation to promote emergent vegetation.

Pool 4 (River Pool): Fill pool to 1158.85.

Pool 5: Try to fill and maintain elevation at 1162 if inflows allow.

Pool 5A: Maintain water at 3-4 feet (elevation 1164).

Pool 6: Dike is currently breached. We will be repairing in 2006. Pool will be filled if possible in 2006(7)

Pool 7: Fill to 2-3 feet (1172).

Pool 7A: The pool will dry out rapidly through an average summer due to the evaporation of its large surface area. Start out with pool at 1172.

Pool 8 (Hepi Lake): As spring runoff increases the pool level, water should be diverted to fill Pools 5 and 5A. If excess water exists after filling Pool s 5 and 7, Pool 8 will be lowered to1170 to increase the vegetation and provide large mudflats for shorebirds in the fall.

Pool 9: Maintain a 2 - 3 foot level in this pool (no greater than 1164.5) to allow for vegetative growth.

Pool 10: No inflows. Maintain an elevation of 1172.25 to encourage vegetation growth.

Pool 11 (West White Lake): Allow water levels to drop to promote emergent vegetation growth.

Pool 12 (East White Lake): Allow this pool to drop as low as possible through evaporation and restricting inflows.

Pool 13 (Mann Lake): This pool will be allowed to dry up to encourage emergent vegetation. No inflows.

Pool 14 (Sprague Lake): Maintain elevation at 1214.25 to help reduce risk of winter kill of the fishery and provide a rest area for migratory waterfowl.

Pool 16 (Horseshoe Slough): Water levels in these pools will be allowed to continue to drop to reestablish vegetation and dry out the pools. No inflows.

5. Location Map

See attached Refuge map (Figure 1 and 2) with all the management pools delineated.

Appendix 1

List of Water Rights

Water Right Filing No. 57: Declaration of Filing dated September 1, 1934 claimed 104 surface acres, for 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now called Hepi Lake from unnamed tributary to Wild Rice River. Listed on the same sheet as Lake Tewaukon/White Lake, as per RO(EN) Marshall Fox's 11-14-83 memo. Water use in pools 5 through 10 is covered under this right, with Hepi Lake to be drawn down to fill these pools.

Water Right Filing No. 64: Declaration of Filing dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 1417 surface acres, for 7198 acre-feet storage, 4251 acre-feet seasonal from Wild Rice River and unnamed tributary.

Permit #1261: 4852 acre-feet storage and 2287 acre-feet seasonal use, for a total of 7139 acre-feet from the Wild Rice River for fish and wildlife use. This permit covers additional storage and seasonal use in Lake Tewaukon, Cutlers Marsh and West White Lake; 409 acre-feet seasonal use to replace water to be diverted from the watershed by Sargent County Water Conservation District project; and total storage and seasonal use for Pools 3 and 4. Priority date December 28, 1964.

Tewaukon NWR #1262: 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, dated December 28, 1964, diversion from an unnamed creek in the SE1/4 NW1/4, Sec. 2.

Tewaukon NWR #1263: 686 acre-feet yearly for Mann Lake (total of 236 acre-feet comprised of 107 acre-feet storage and 129 acre-feet seasonal use) and Horseshoe Slough (total of 450 acre-feet comprised of 270 acre-feet storage and 180 acre-feet seasonal use) dated December 28, 1964, diversion from the Wild Rice River.

Tewaukon NWR #3816 Nickeson Tract: 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and US Fish and Wildlife Service (FWS). Diversion is from the Wild Rice River, W ½ Section 27, T. 130 N., LTL, R. 54 W. Priority date August 15, 1985. Received perfected water permit on August 14, 1997. Recorded in the Register of Deeds, Sargent County on March 3, 1998.

In December, the Service submitted an application for prescriptive water rights pursuant to the provisions of State Senate Bill No. 2182 for 859 acre feet.

Appendix 2

Pools, Elevations and Acres

Pool No. & Name	January 1, 2005			December 31, 2005		
	Elevation	Surface Acres *	Volume (acre ft.)*	Elevation	Surface Acres *	Volume (acre ft.) *
Pool 1 - Tewaukon	1148.26	1062	8650	1148.54	1064	8948
- Parker's Bay	1147.5	79	245	1148.50	87	328
Pool 2 - Cutler's Marsh	1151.34	262	1166	1148.35	201	447
Pool 2A	1151.34	22	31	1148.35	0	0
Pool 3 - Maka Pool	1154.05	101	262	1150.75	30	61
Pool 3A	1154.05	8	11	1150.75	0	0
Nickeson Bottoms	1152.0			1154.0		
Pool 4 - River Pool	1159.96	122	325	1153.0	0	0
Pool 5	1156.0	0	0	1162.0	5	15
Pool 5A	1163.0	6	8	1164.0	9	16
Pool 6	1163.0	0	0	1163.0	0	0
Pool 7	1172.0	0	21	1172.0	15	21
Pool 7A	1173.50	20	2	1173.0	0	0
Pool 8 - Hepi Lake	1173.42	88	301	1175.0	101	455
Pool 9	1165.5	11	30	1167.0	12	47
Pool 10	1172.25	4	4	1175.0	7	18
Pool 11 - West White Lake	1150.0	72	174	1148.45	51	78
Pool 12 - East White Lake	1146.5	96	341	1148.45	103	535
Pool 13 - Mann Lake	1204	37	36	1204.2	38	42
Pool 14 - Sprague Lake	1214.24	196	1676	1214.20	196	1669
Pool 16 - Horseshoe Slough						
- Pool 1 (A Pool)	1206	16	10	1206.64	33	26
- Pool 2 (B Pool)	1202	5	1	1206.64	48	150
- Pool 3 (C Pool)	1203	6	6	1206.64	11	37
- Pool 4 (B West)	1206	45	115	1205.64	42	99
- Pool 5 (B North)	1204	7	2	1206.64	28	49
- Pool 6 (C North)	1206	4	1	1207.35	11	11
- Pool 7 (C South & C East)	1204	0	0	1207.00	22	51

Appendix 3

WATER USE REPORT/MANAGEMENT PLAN
SHORT FORM

Storm Lake NWR, Sargent County
Station Name

Summer 2004
Date of Inspection

Declaration of Filing: 8/30/1937
Water Right No.

Drainage ditch (legal)
Sources(s)

Several
(522 acre-feet storage)
(900 acre-feet seasonal)

Means of Diversion Uncontrolled
Rate Unknown

Water Diverted: Yes ____ No _X_

Water Level est 654 acre-feet
(Elevation or Est. Storage Amount)

* Impoundment(s): Yes ___ No _X_

* Well(s)
Free Flowing none gpm
Pumped_____ gpm

Surface irrigation_____
(Crop) _____
Fish & Wildlife _X_ virtually no public use
Stock_____
Domestic_____

Overall Climatic Conditions: Since 2000 the amount of precipitation has decreased, the region seems to be going into a drier cycle.

Condition of Facilities: A diversion dam at the head of the feed ditch serving Storm Lake washed out well before 1976. The town dug a ditch beside the existing structure to allow for flood waters to move out of the town. At the end of 1997 the town placed a culvert with flap gate at an agreed elevation by a special use permit with the Refuge manager. The culvert is well above the existing structure and will allow flood waters to move out without impacting the water right. The ditch through the golf course was also cleaned in 1997 through a special use permit to facilitate removal of flood waters. At that time the Golf Course placed two new bridges on the fee title property without notification of the Refuge. An agreement with the Service was signed to mitigate the mowing of the feetitle property with no mow areas along the golf course edges was signed in 1999.

Proposed Water Program: No water management capability is present. Water runs down the ditch into the lake to an unknown degree each spring. Water did fill Storm Lake in 1993. Current high waters and overland flooding have resulted in the feeder ditch becoming an outlet for the water in Storm Lake into the legal drain.

Comments: The lake serves as a waterfowl loafing site by Canada geese, canvasbacks, redheads, lesser scaup, mallards, teal, gadwalls during low water years. Water levels fluctuate without management. If active management was initiated, some degree of improvement might be gained by a cycle of draw down management. It is questionable if the benefits would be worth the costs. The Golf Course Association of Milnor, which at one time requested lake water to irrigate portions of the Storm Lake Golf Course, has found a well water source. The Association was granted a conditional water right, junior to that of the Service.